



U.S. Department  
of Transportation

**Federal Highway  
Administration**

JAN 7 1994

400 Seventh St., S.W.  
Washington, D.C. 20590

Refer to: HNG-14

JAN 13 1994

J. M. Essex, P.E.  
Vice President, Sales  
Energy Absorption Systems, Inc.  
One East Wacker Drive  
Chicago, Illinois 60601

Dear Mr. Essex:

Your December 14, 1993, letter requested the Federal Highway Administration's (FHWA) acceptance of the TRITON Barrier as the barrier's own end treatment. Details of the design and crash tests results were included in your "TRITON Barrier End Treatment Crash Test Report" dated December 1993.

Our review of the crash test data indicated that you successfully completed the tests required for a non-redirective crash cushion for Test Level 2 conditions. These tests are summarized as follows:

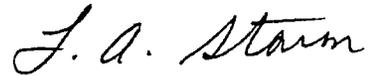
NCHRP 350 Test Number	Vehicle Mass (kg)	Impact Speed (km/h)	Impact Angle (degree)	Occ. Imp. Velocity (m/s)	Ridedown Acceleration (g's)
2-40	820	70	0	9.4	-5.9
2-41	2000	70	0	6.3	-7.8
2-42	820	70	15	8.3	-3.6
2-43	2000	70	15	5.7	-6.6
2-44	2000	70	20	6.6	-7.1

Based on the above results, we consider the TRITON barrier end treatment to be an acceptable terminal for the TRITON barrier itself, provided the end, or first section, contains no water and the retaining pin is left out of the exposed end. Under the stated Test Level 2 conditions, the barrier length of need begins at the sixth segment from the end.

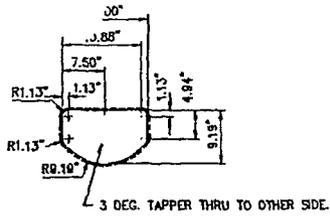
This acceptance is given with the understanding that the TRITON end treatment is applicable for use only on the end of a TRITON longitudinal barrier installation and is not appropriate to shield fixed object hazards. It is further understood that, like the barrier itself, it is not acceptable for use

where impact speeds in excess of 70 km/h are likely. Users of this system must be further cautioned that significant vehicular penetration is possible for impacts at or near the end, and that a clear unobstructed runout area is needed behind the terminal sections for optimal performance.

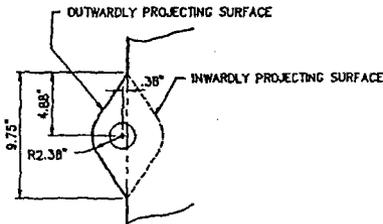
Sincerely yours,

A handwritten signature in cursive script that reads "L. A. Staron".

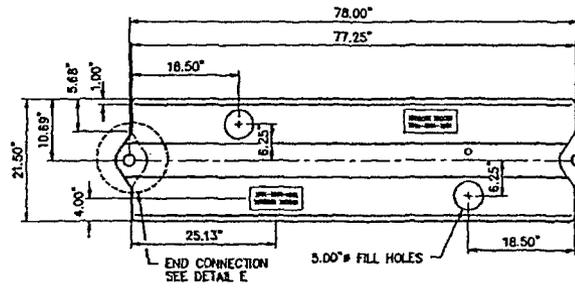
Lawrence A. Staron  
Chief, Federal-Aid and Design Division



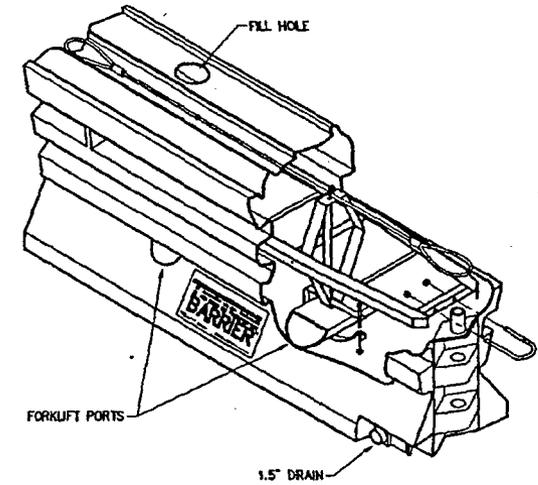
**DETAIL B**  
FORKLIFT PORT



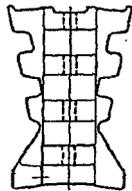
**DETAIL E**  
END CONNECTION - TYP. BOTH ENDS OF BARRIER  
(SOME DETAIL REMOVED FOR CLARITY)



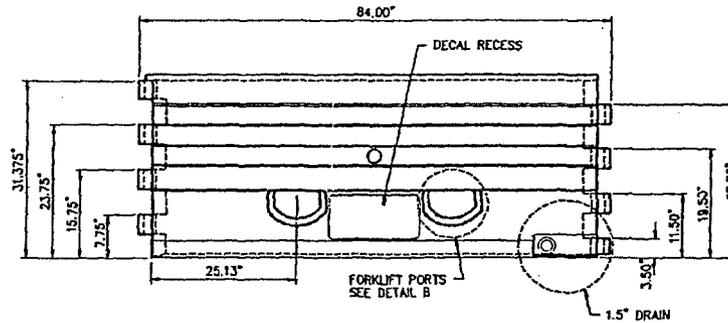
**TOP VIEW**



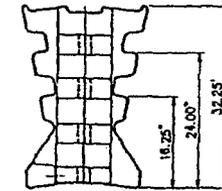
**ISOMETRIC VIEW**



**LEFT END VIEW**



**SIDE VIEW**



**RIGHT END VIEW**

DATE	BY	CHKD.	APP.

NOTE:  
 1 RADIUS ALL CORNERS, 0.75" R, EXCEPT WHERE NOTED.  
 2 DIMENSIONS SHOWN ARE APPROXIMATIONS AND MAY VARY DUE TO SHRINKAGE AFTER MOLDING.

Revisions	Date	Rev.	By	Ckd.	App.	DESIGN SPEED	M.P.H.
						AVERAGE G's	
						EST. FORCE ON BACKUP	
						STRUCTURE	_____ KIPS
						Designed	_____ Date
						Drawn	<i>D L Starus</i> 11/13/92
						Checked	<i>X. Marlman</i> 11/13/92
						Approved	<i>J.F. LaTurner</i> 11/13/92

REFERENCES
Project No. _____ Sales Order No. _____
Serial No. _____ Color _____

**ENERGY ABSORPTION SYSTEMS, INC.**  
ENGINEERING AND RESEARCH DEPARTMENT

**TRITON BARRIER**  
MOLDED PART

SCALE	SIZE	DOC. NUMBER	DATE	REV.
3/4" = 1'-0"	C	27-95-04R		